

A
132:
Inbl
86

FOREST CONTROL

by

CONTINUOUS INVENTORY

"Today I have grown taller from walking
with the trees."

...Karle Wilson

Milwaukee, Wis. May, 1961 No. 86

"You must know that in all this
Province of Malabar there is never
a tailor to cut a coat or stitch it,
seeing that everybody goes naked."

The Travels of Marco Polo
1278 A. D.

FORESTRY SCHOOL LIBRARY

COPY NO. _____



LOG AND TREE GRADING FOR WOOD QUALITY

PART III

Handling the Woods Job in Tree Quality Grading

Tree quality grading is a combination of the application of log grading techniques on the first log in the tree, or on some other predecided section, and the use of empirical tables of log grade recovery for the upper sections of the tree which are not graded. It is both costly and somewhat unreliable to grade all of the sawlogs in each tree, and this is seldom done.

Instead, the quality grades of the butt logs of standing hardwood sawlog trees 11" and larger in DBH are taken. Generally, the minimum length log is 8', and top diameters are seldom taken below 8" or 9" in the North Central States.

Standard Rules of Practice for Tree Quality Grading:

1. Grade only the first log in the tree; generally the butt log.
2. Factory log grades 1, 2 and 3, and tie and timber logs, are most commonly recorded.
3. In all cases try for a first log of maximum length, consistent with optimum grade and maximum straightness and soundness.
4. Utilize the sawlog length of the tree fully. It is seldom desirable to exclude any portion of the commercial length in the top of the tree for the purpose of improving the grade of the butt log.
5. The log graded above a butt-off less than 10' long is considered a butt log. The log graded above a 10' or longer butt-off is considered an upper log.
6. The grade of the butt log is decided by the grade of the lowest of the three best faces.
7. The grade of the first log in the tree is assumed to be a measure of the quality of the tree.
8. Forest Products Laboratory log grading rules are recommended for use.

Progressive Steps in Determining Log and Tree Quality Grades

1. Measure and record the DBH of the tree.
2. Measure the total usable length of the tree, including butt-off and cut-out or cull sections.
3. Measure the usable length of the butt log, with due relation to the total usable length of the tree.
4. Determine the length of the cull butt-off section.
5. Decide if the first log is a butt or an upper log.
6. Determine the scale deduction for sweep and crook in percent of net log scale.
7. Estimate or measure the top DIB of the first log in the tree, using calipers, taper guides, or the Girard form class to assure relative accuracy.
8. If the log has a top diameter large enough for log grades 1 or 2, grade the faces. Begin with the best or poorest faces, whichever predominate.
9. If the log is poorer than grade 1 or 2, determine if shifting the faces or changing the log length will improve the log grade.
10. If this possibility exists, regrade the log on the basis of the changed length and top DIB, but make certain in all cases that the tree is fully utilized.
11. Record the final log and tree grade.

Degrade Bands

Although log and tree grading must be slowly and carefully done, the task does speed up with experience. The grade of No. 1 logs with a 13" - 15" top DIB range is a case in point. On each face of this possible No. 1 log there is a segment or band within which the presence of one or more degrading defects will definitely lower the grade face from No. 1 to Nos. 2 or 3. Defects in the degrade band on two faces of any log which is otherwise suitable for a No. 1 grade always reduce the grade of the log. When such defects are clearly evident there is no need to carefully measure out the length, or the sum of the lengths, of clear cuttings to fix the grade. The mere presence of defects in these predetermined, forbidden places is indicative of lowered grade recovery. The attached sample charts of degrade bands make this very clear.

CAL STOTT
Forester
U. S. Forest Service, Region 9

LOG GRADING SHORT CUTS DEGRADE BANDS NO.1 LOGS 13"-15" IN TOP DIB

May, 1961

- 3 -

The sketch shows one face of a possible No. 1 Factory log. The top diameter range is 13 to 15 inches, and 7 foot cuttings are allowed. If the log has one or more defects within the degrade bands shown in either the upper or lower ends of the log, the log grade is reduced below No. 1.

16'

14'

12'

10'

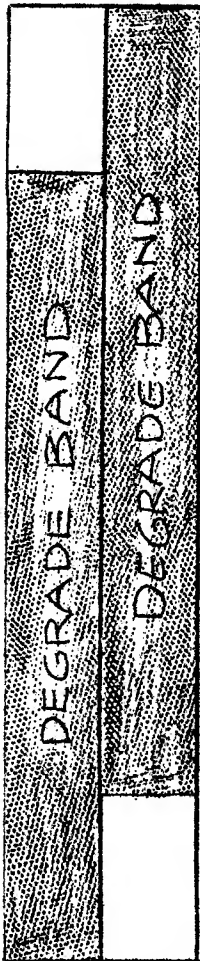
8'

6'

4'

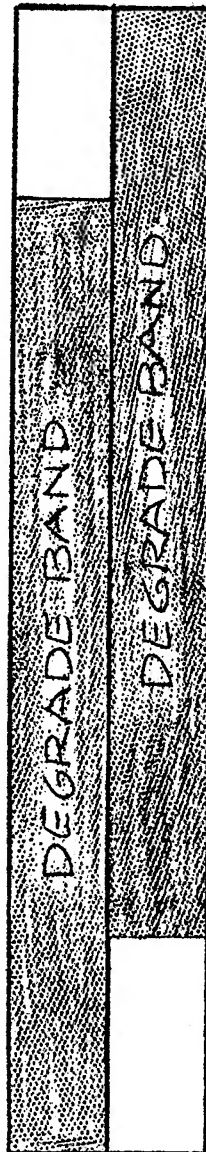
2'

10' LOG



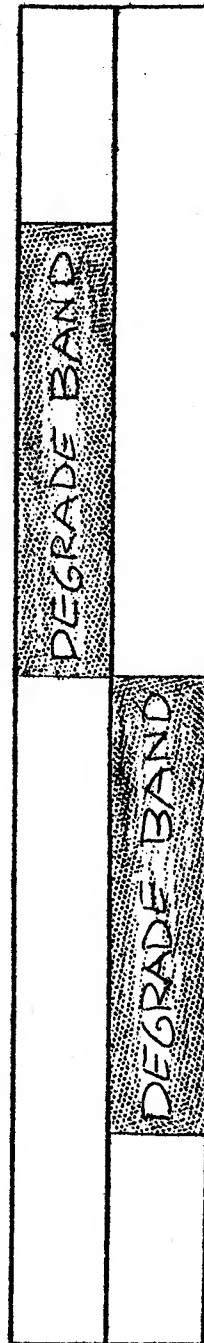
10' LOG

12' LOG



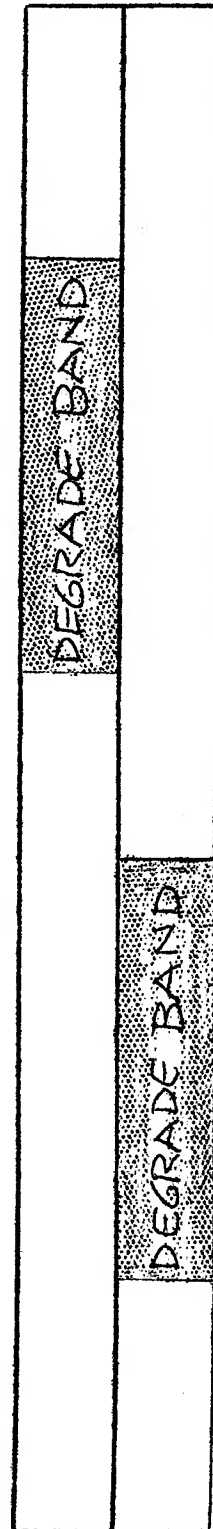
12' LOG

14' LOG



14' LOG

16' LOG



16' LOG

-16'

-14'

-12'

-10'

-8'

-6'

-4'

-2'

LOG LENGTH IN FEET

LOG GRADING SHORT CUTS

DEGRADE BANDS

NO. 1 LOGS 16"-19" IN TOP DIB

May, 1961

- 4 -

The sketch shows one face of a possible No. 1 Factory log. The top diameter range is 16 to 19 inches, and 5 foot cuttings are allowed. If the log has one or more defects within the degrade bands shown, in either the upper or lower ends of the log, the log grade is reduced below No. 1.

16'

14'

12'

10'

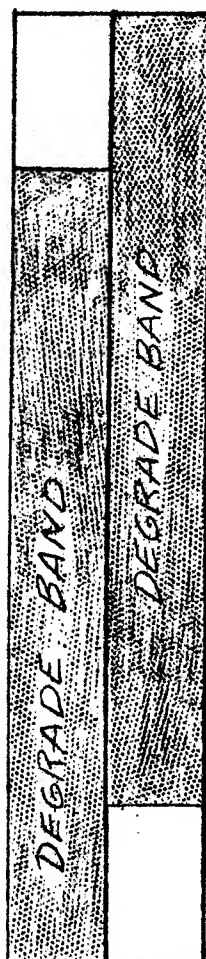
8'

6'

4'

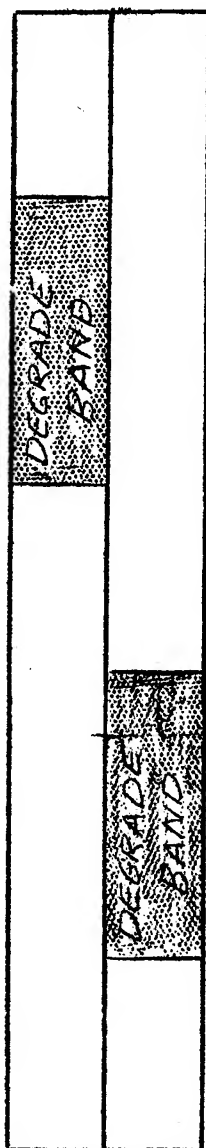
2'

10' LOG



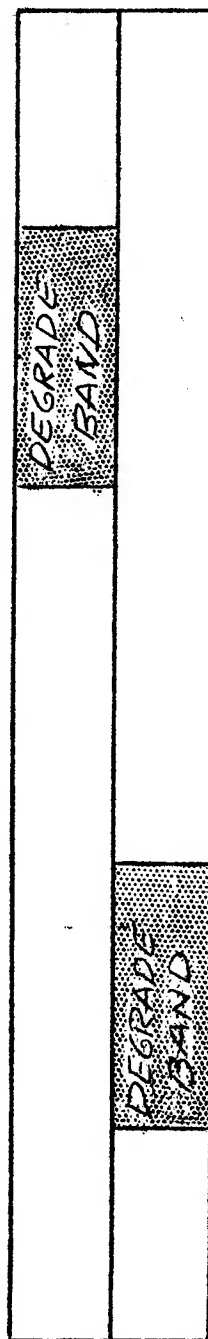
10' LOG

12' LOG



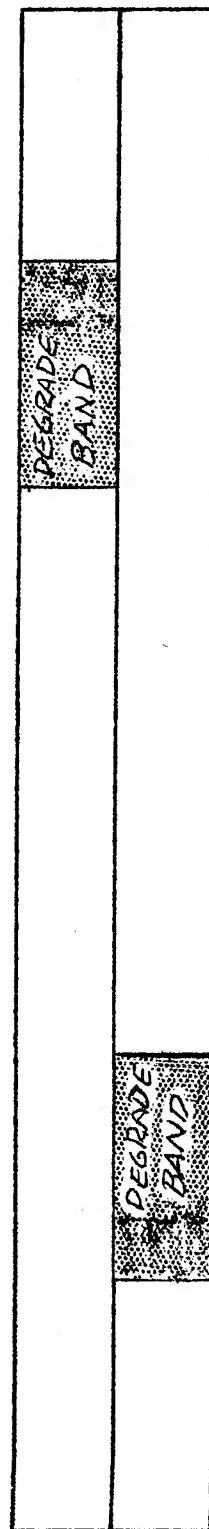
12' LOG

14' LOG



14' LOG

16' LOG



16' LOG

16'

14'

12'

10'

8'

6'

4'

2'

LOG LENGTH IN FEET